

## SPATIO-TEMPORAL PATTERN OF LITERACY RATE IN KATHUA DISTRICT OF JAMMU AND KASHMIR, INDIA

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### ABSTRACT

*Literacy plays an important role to study the demographic, socio-cultural and economic status of any region. According to Indian Census 2011, Literacy has been defined as "A person aged seven and above, who can both read and write with understanding in any language, is treated as literate". Lack of literacy breaks the economic, political and all development process of that society or a region. Therefore, the present study focuses on identifying the spatio-temporal pattern of literacy in Kathua District. This study is to examine the block-wise decadal literacy rate of Kathua District from 2001 to 2011. It has attained a relatively good position in literacy as compared to other districts of J&K in 2011. The paper uses the data of two consecutive census reports, 2001 and 2011 'District Census Handbook (DCH) of Kathua' and calculates the disparity index between male-female literacy rates of the study area. The study has observed that in Kathua district the literacy was recorded only 63 percent in 2001 and it reached up to 70.8 percent in 2011. It showed 7.8 percent notable positive growth during the last decade due to the development of educational facilities, transportation, agricultural and economic development. In 2001, the female and the male literacy rate was 51.4 percent and 73.8 percent respectively, whereas in 2011, the female literacy rate was 60.8 percent and the male was 80 percent. It is noticed here that in each block of Kathua district the male literacy was higher than that of the females.*

**KEYWORDS:** Literacy, Male-Female Literacy & Disparity Index

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### INTRODUCTION

Literacy is that qualitative aspect of the population which is a basically reliable index of the socio-economic development of an area. It is important for economic development, social development and even for population control. On the other hand lack of literacy breaks the social and economic development of a society. A certain minimum level of literacy is, therefore, a basic requirement for people to get out of unawareness and backwardness. Literacy is an index of human development and quality of human life any person above the age of seven years, who can read and write in any language is considered as literate (Husain, 2011). The role of education in facilitating social and economic progress is well accepted. Access to education is significant in the access to emerging opportunities that accompany economic growth. Keeping in view of these facts, there has been a major thrust on education since independence; but as far as ensuring the quality of education in a particularly rural area is concerned it has always been one of the biggest challenges for the government (Hazra, 2011). In the 2001 census, the proportion of literates in the district was 63 percent thereby showing that the district has registered an increase of 7.8 percent of literates over that of 2011. The percentage of male and female literates in the district was 73.8 and 51.4 respectively in 2001. The corresponding proportion pertaining to 2011 Census was 80 percent for males and

60.8 percent for females; registering an increase of 6.2 percent and 9.4 percent of male and female literates respectively during the period from 2001 to 2011 Census. The sharp increase in the literacy rate is mostly due to factors such as accelerated socio-economic development, government policy, and the positive attitude of the people towards education. In almost all the block a marked growth of literacy rate is recorded in the Kathua district.

### Study Region

Known as Gateway of Jammu and Kashmir state, Kathua district is located at the southern part of the state between  $32^{\circ}17'$  to  $32^{\circ}55'$  north latitude and  $75^{\circ}17'$  to  $75^{\circ}55'$  east longitude. The district stretches over an area of 2502 Sq. Kms. It has an average elevation of 307 meters (1,007 ft). It is surrounded by district Doda in the north, in the north-west by Udhampur district and Samba districts, the state of Himachal Pradesh in the east, in the south-east by Punjab and in the south-west by Pakistan. The district headquarters is Kathua. For administrative convenience, the district is subdivided into eight Community Development Blocks; viz; Lohai Malhar, Bani, Bashohli, Duggan, Billawar, Barnoti, Hiranagar, and Kathua. According to 2011 census, the population of Kathua district is 616435 and the population density is 246 persons per sq. km. Majority of the population belong to rural areas. District Kathua comprises plain, hilly and mountainous terrains. Hence the low literacy attainments in this district are strongly influenced by the rugged topography of the hilly region.

### LOCATION MAP OF STUDY AREA

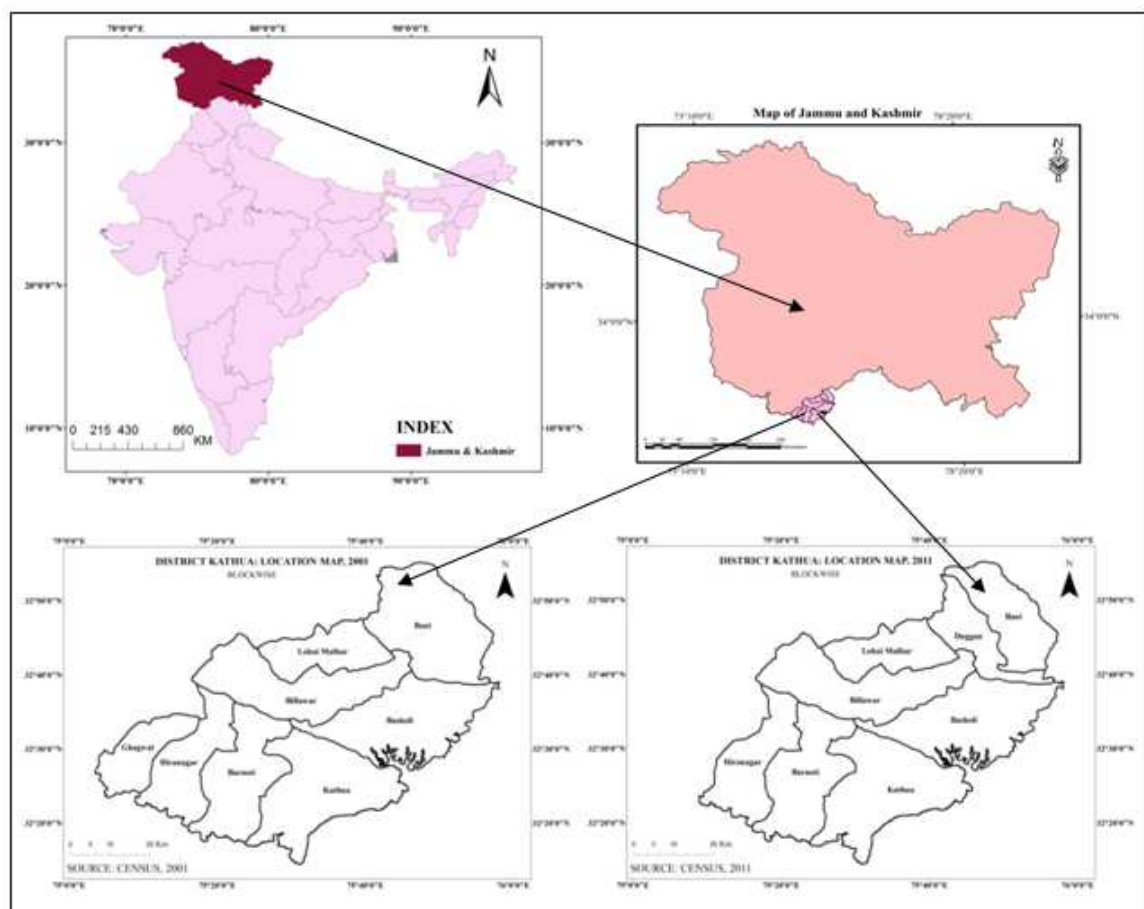


Figure 1

## Objectives

The present study has been undertaken with the following specific objectives.

- To study the block-wise spatio-temporal pattern of literacy rate in the study region.
- To find out the changing pattern of population literacy rate during 2001-2011.
- To calculate the block wise disparity between male and female literacy levels.

## Database and Methodology

The present study is based on secondary data sources. To fulfill these objectives data regarding literacy rate of Kathua district was obtained from District Census Handbooks. The C. D. block is taken as the component unit of investigation. The analysis and interpretation of data have been done from a geographical point of view. High, moderate and low literacy patterns were examined in detail. Arc GIS software was utilized to prepare the base maps and thematic maps. To calculate the literacy rate following formulas are used.

- General Literacy Rate = Total Literate population above 7 years  $\div$  Total population  $\times$  100
- Male Literacy Rate = Total Male Literate population above 7 years  $\div$  Total Male population  $\times$  100
- Female Literacy Rate = Total female Literate population above 7 years  $\div$  Total female population  $\times$  100

To measure the male-female disparity in literacy, Sopher's Disparity Index (1974) modified by Kundu and Rao (1983) has been employed:

$$Ds = \log (X2 / X1) + \log (100 - X1) / (100 - X2) \quad (1)$$

Kundu and Rao's modified disparity index formula, as follows:

$$GDI = \log (X2 / X1) + \log (200 - X1) / (200 - X2) \quad (2)$$

Where =  $X2 > X1$

GDI = Gender Disparity Index

$X2$  = % of Male Literacy

$X1$  = % of Female Literate

For the present study the modified version of Sopher's index has been used to compare the disparity in literacy level among different aspects in the study area.

## RESULTS AND DISCUSSIONS

A glance at the respective literacy rates obtained in 2011 shows that the district as a whole has 70.8 percent literacy, that of the State is 67.16 percent and it means that the study region had high literacy than the State during 2001. The figures for male and female literacy rates are also satisfactory but it is appreciable that the increase in female literates during the last decades is higher than the total and male literates in the study region.

**Table 1: Pattern of Literacy and Decadal Change in Literacy Rate (2001-2011)**

Block	Total Literacy			Male Literacy			Female Literacy		
	2001	2011	Change	2001	2011	Change	2001	2011	Change
Lohai Malhar	38.5	53.8	15.3	54.1	67.0	12.9	21.9	39.0	17.1
Bani	40.8	53.6	12.8	58.9	68.9	10.0	21.0	37.0	16.0
Basholi	55.9	66.4	10.5	68.1	76.6	8.5	42.6	55.1	12.5
Billawar	62.1	72.0	9.9	73.9	81.7	7.8	49.5	61.2	11.7
Barnoti	69.5	76.4	6.9	77.6	83.0	5.4	60.7	69.2	8.5
Hiranagar	71.9	79.5	7.6	81.2	87.0	5.8	62.5	71.6	9.1
Kathua	67.4	75.5	8.1	75.6	82.4	6.8	57.5	67.6	10.1
Duggan	-	54.0	-	-	69.9	-	-	36.9	-
Ghagwal	75.7	-	-	85.1	-	-	66.0	-	-
<b>District</b>	<b>63.0</b>	<b>70.8</b>	<b>7.8</b>	<b>73.8</b>	<b>80.0</b>	<b>6.2</b>	<b>51.4</b>	<b>60.8</b>	<b>9.4</b>

Source: District Census Handbook 2001, and 2011

**Note:** In 2004, Ghagwal block was shifted to Samba district and Duggan block was bifurcated from Bani block.

### Spatio-Temporal Pattern of Total Literacy Rate

In the year 2001, the literacy rate for the study region as a whole was 63 percent. The highest proportion of literacy rate above 62.2 percent has been claimed by Ghagwal, Hiranagar, Barnoti and Kathua blocks. The moderate literacy rate ranging from 40.9 to 62.1 percent is observed in Basholi and Billawar blocks (figure 2). The low literacy rate ranging from 38.5 to 40.8 percent is found in Bani and Lohai Malhar blocks. As per 2011 census, the literacy rate for the study region was 70.8 percent. But block-wise statistics reveal that the high literacy rate is found in Hiranagar with 79.5 percent has recorded the highest literacy rate, followed by Barnoti at 76.4 percent, Kathua with 75.5 percent and Billawar 72 per cents. It is because of a higher number of the educational institutions and better agricultural practices which leads to the better economic condition of parents. The moderate literacy rate is observed in Billawar and Basholi blocks i. e. ranging from 54.1 to 72.0 percent. The lowest literacy is registered by blocks like Bani, Duggan and Lohai Malhar i. e. ranging from 53.6 to 54.0 percent due to less education, poor transport and infrastructure facilities because of adverse physiography. The spatio-temporal change shows an increasing trend of literacy for the decade 2001-2011. The study region has reported an increase of 7.8 percent in the literacy rate during the last decade. The highest positive change is found in Lohai Malhar and Bani blocks i. e. 15.3 and 12.8 percent respectively due to the increase in education institutions and social awareness as compared to the previous year. The moderate positive change in literacy rate is observed in Basholi and Billawar block i. e. above 8.11 percent. The low positive change in literacy rate is recorded in Kathua, Hiranagar and Barnoti blocks i. e. ranging from 10.6 to 15.3 percent because these blocks had already higher literacy rates.

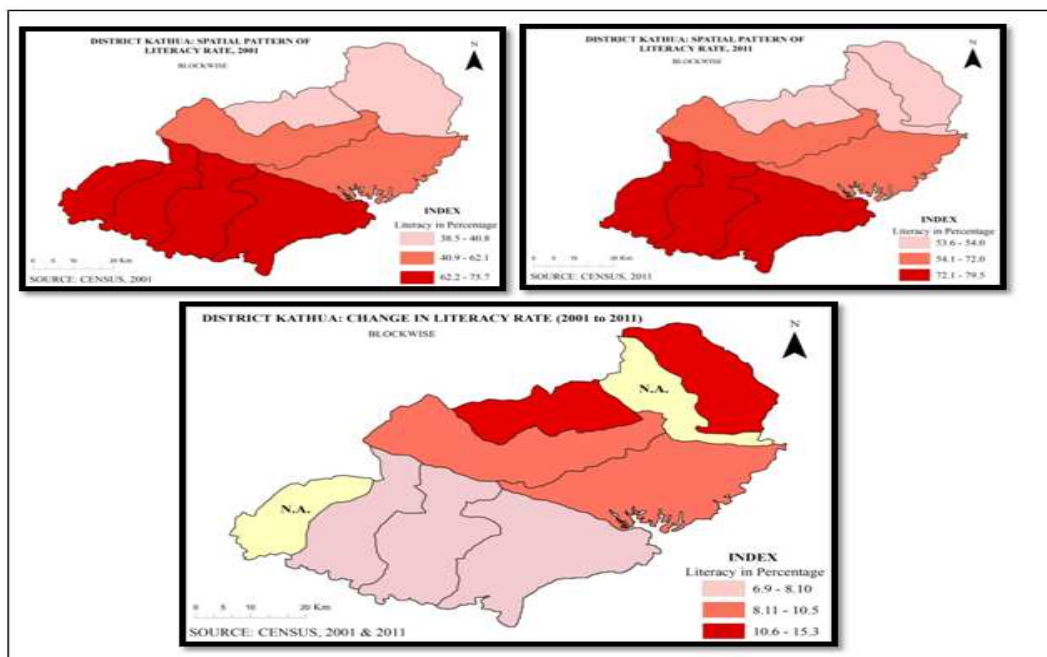


Figure 2: Spatial Pattern of Total Literacy Rate in Kathua District (2001-2011)

### Spatio-Temporal Pattern of Male Literacy Rate

The male literacy rate for the region in 2001 was 73.8 percent. But block-wise statistics reveal that the high male literacy rate is found in Hiranagar and Ghagwal blocks i. e. ranging from 77.7 to 85.1 percent. The moderate male literacy rate ranging from 59.0 to 77.6 percent is recorded in Kathua, Barnoti, Basholi and Billawar blocks (figure 3). The low male literacy rate is recorded in Bani and Lohai Malhar blocks ranging from 54.1 to 58.9 percent. During the year 2011, this literacy rate is 80 percent. The high male literacy rate i. e. above 80% is observed in Kathua, Hiranagar, Barnoti, and Billawar due to more urbanization and availability of a large number of education facilities.

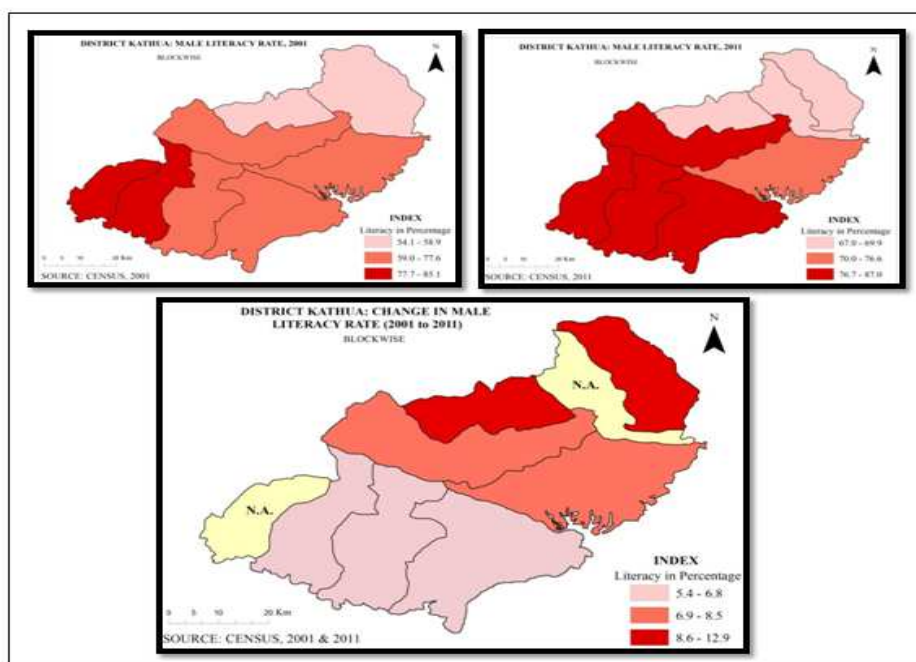
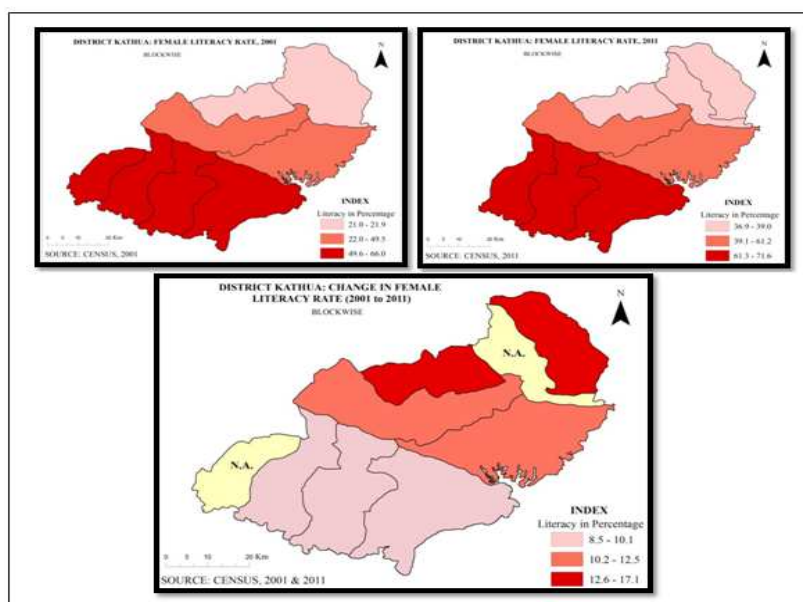


Figure 3: Spatial Pattern of Male Literacy Rate in Kathua District (2001-2011)

The moderate male literacy rate registered in Basholi block is 76.6 percent. The low male literacy rate i. e. ranging from 67.0 to 69.9 percent is found in Lohai Malhar, Bani and Duggan blocks because these blocks have undulating topography, economic backwardness, and diminutive development in educational and infrastructure facilities. The district as a whole has 6.2 percent change in male literacy rate. The high positive change in male literacy rate is found in Bani and Lohai Malhar blocks i. e. above 8.6 percent due to the increase in educational facilities than the previous decade. The moderate positive change in male literacy rate is observed in Basholi and Billawar blocks ranging from 6.9 to 8.5 percent. The low positive change in male literacy rate is recorded in Barnoti, Hiranagar and Kathua block i. e. 5.4 to 6.8 percent because these blocks are well developed.

### Spatio-Temporal Pattern of Female Literacy Rate

The low female literacy rate is a serious problem in the country and it is more critical in the study region. The proportion of female literates in the year 2001 was only 51.4 percent. The high female literacy rate is recorded in Kathua, Barnoti, Hiranagar and Ghagwal blocks i. e. ranging from 62.2 to 75.7 percent (Figure 4).



**Figure 4: Spatial Pattern of Female Literacy Rate in Kathua District (2001-2011)**

The moderate female literacy rate is observed in Basholi and Billawar blocks only ranging between 40.9 to 62.1 percent. The low female literacy rate of 38.5 percent or below is recorded in Bani and Duggan blocks. The female literacy rate is 60.8 percent in the year 2011. The high female literacy rate above 61.3 percent is found in Barnoti, Hiranagar and Kathua blocks due to the location of the district headquarter and development of education facilities. The moderate female literacy rate ranging from 39.1 to 61.2 percent is observed in Basholi and Billawar blocks. The low female literacy rate ranging from 36.9 to 39.0 percent is found in Bani and Lohai Malhar blocks due to the low status of women and dominance of males in the society. The spatio-temporal change in female literacy suggests an increase of 9.4 percent. The increase is appreciable in Bani and Lohai Malhar blocks as more than 12.6 percent increase is observed due to development of education and high social awareness. The moderate positive change ranging from 10.2 to 12.5 percent in female literacy rate is observed in Basholi and Billawar blocks. The low positive change ranging from 8.5 to 10 percent in female literacy rate is recorded in Kathua, Hiranagar and Barnoti blocks because these blocks are socio-economically



developed due to the availability of good education facilities.

### Gender Disparity Index in Literacy Rate

Gender disparity in literacy indicates the status of women in society. The higher rate of gender disparity shows that women in that region are severely neglected. Education of women has a major impact on the overall development of a society. In recent decades, the government has launched many programmes and policies to increase the rate of female literacy. Gender disparity always leads to weaker economic growth, while stronger economic growth usually leads to a reduction in gender disparity.

**Table 2: Gender Disparity in Literacy Rate in the Kathua District during 2001-2011**

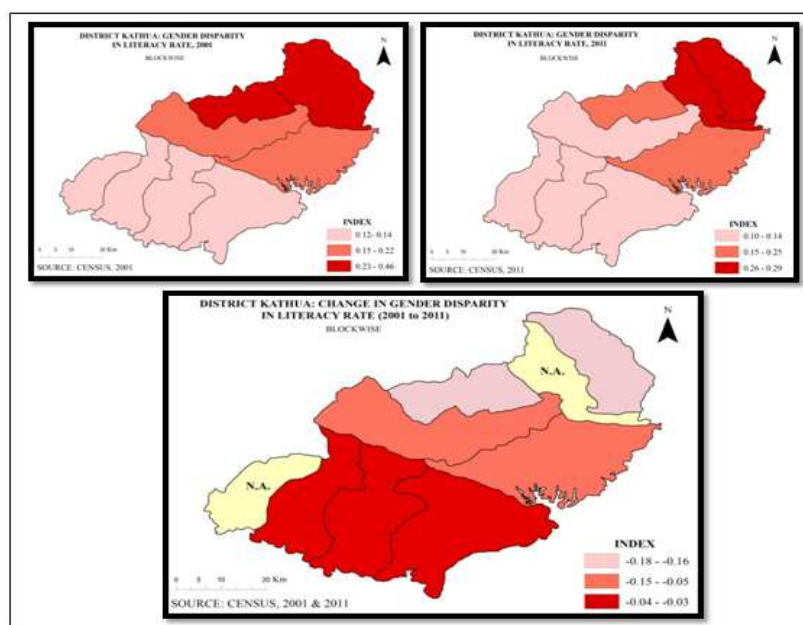
Block	Decades		Change in between 2001-11
	2001	2011	
Lohai Malhar	0.41	0.25	-0.16
Bani	0.46	0.29	-0.18
Basholi	0.22	0.16	-0.06
Billawar	0.19	0.14	-0.05
Barnoti	0.12	0.10	-0.03
Hiranagar	0.13	0.10	-0.03
Kathua	0.14	0.10	-0.03
Duggan	-	0.29	-
Ghagwal	0.13	-	-
<b>District</b>	<b>0.17</b>	<b>0.14</b>	<b>-0.04</b>

Source: District Census Handbook 2001, and 2011

**Note:** In 2004, Ghagwal block was shifted to Samba district and Duggan block was bifurcated from Bani block

### Spatio-Temporal Pattern of Gender Disparity in Literacy Rate

The district as a whole had 0.17 disparity index in 2001. The high gender disparity in literacy rate i. e. ranging from 0.23 to 0.46 is recorded in Lohai Malhar and Bani blocks (figure 5). The moderate gender disparity in literacy rate ranging from 0.15 to 0.22 disparity index is observed in Billawar and Basholi block.



**Figure 5: Spatio Pattern of Gender Disparity in Literacy Rate in Kathua District (2001-2011)**

The low gender disparity in literacy rate ranging from 0.12 to 0.14 disparity index is recorded in Barnoti, Hiranagar, Kathua, and Ghagwal blocks. During the year 2011, the district as a whole has 0.14 disparity index. The high gender disparity in literacy rate i. e. ranging from 0.26 to 0.29 is recorded in Bani and Duggan block due to the negligence of female education. The moderate gender disparity in literacy rate ranging from 0.15 to 0.25 disparity index is observed in Lohai Malhar and Basholi blocks. The low gender disparity in literacy rate ranging from 0.10 to 0.14 disparity index is found in Billawar, Hiranagar, Barnoti and Kathua blocks due to the development of education, better economic condition and awareness in society about female literacy. The district as a whole has -0.04 gender disparity index and it means that the study region has a negative change in gender disparity. But block level decrease varies ranging from -0.03 to -0.18 disparity index. The decrease in gender disparity in literacy rate ranging from -0.04 to -0.03, is on a higher scale in Hiranagar, Barnoti, Kathua blocks due to the implementation of Government National policy on education, good educational facilities and better occupational structure. The moderate decrease in gender disparity index ranging from -0.15 to -0.05 is recorded in Billawar and Basholi blocks. The minimal decrease in gender disparity in literacy rate ranging from -0.18 to -0.16 is recorded in Bani and Lohai Malhar blocks due to the lesser educational development.

## CONCLUSIONS

The above study reveals that, overall there is a significant increase in literacy rates in the district, which has increased from 63% to 70.8% between the years 2001 to 2011. It is discernible from both the census and sex-wise statistics that the literacy rate is comparatively higher in males than females but the increase in the literacy rate of females (9.4 percent) is higher than that of males (6.2 percent). The study clearly indicates that there is a significantly wide range of variations over the period of ten years in gender disparities affecting literacy rates between 2001 and 2011 censuses among the C. D. Blocks of Kathua district. It was observed that the gender disparities in the hilly regions are relatively high as compared to the plains of the district. To reduce this gap in gender literacy, proper educational opportunities should be provided for women especially in the hilly regions.

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